



# OD1-B035H15I14

OD Mini

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type           | Part no. |
|----------------|----------|
| OD1-B035H15I14 | 6050503  |

Other models and accessories → [www.sick.com/OD\\_Mini](http://www.sick.com/OD_Mini)



### Detailed technical data

#### Performance

|  |   |
|--|---|
| <b>Measuring range</b>                 | 20 mm ... 50 mm   |
| <b>Target</b>                          | Natural objects   |
| <b>Repeatability</b>                   | 6 μm <sup>1) 2)</sup>   |
| <b>Linearity</b>                       | ± 30 μm <sup>3) 4)</sup>  |
| <b>Response time</b>                   | ≥ 2 ms <sup>5)</sup>  |
| <b>Measuring frequency</b>             | ≤ 2 kHz   |
| <b>Output time</b>                     | ≥ 0.5 ms  |
| <b>Light source</b>                    | Laser, red  |
| <b>Laser class</b>                     | 1 (IEC 60825-1:2014, EN 60825-1:2014) <sup>6)</sup>   |
| <b>Typ. light spot size (distance)</b> | 800 μm x 450 μm (35 mm)   |
| <b>Additional function</b>             | Averaging 1 ... 512x, automatic or manual sensitivity adjustment, Analog outputs can be taught in, Switching outputs can be taught in, Invertable switching output, switching mode: window (Wnd), switching mode: distance to object (DtO), switching mode: object between sensor and background (ObSB), multifunctional input: laser-off / external teach-in / trigger |

<sup>1)</sup> Averaging function set to: 512.

<sup>2)</sup> Constant ambient conditions.

<sup>3)</sup> Measurement on 90 % remission (ceramic, white).

<sup>4)</sup> For best performance consider warm up time ≤ 5 minutes.

<sup>5)</sup> With fixed sensitivity adjustment and averaging setting = 1. With automatic sensitivity and measuring rate 500 μs: 2 ... 7.5 ms response time/measuring rate 1,000 μs: 4 ... 15 ms response time.

<sup>6)</sup> Wavelength: 655 nm, max. output: 390 μW (laser class 1) / < 1 mW (laser class 2).

#### Interfaces

|                                   |                              |
|-----------------------------------|------------------------------|
| <b>Analog output</b>              | 1 x 4 mA ... 20 mA (≤ 300 Ω) |
| <b>Resolution analog output</b>   | 13.4 bit                     |
| <b>Multifunctional input (MF)</b> | 1 x <sup>1)</sup>            |

<sup>1)</sup> MF can be used as laser-off, trigger, external teach-in or deactivated.

## Mechanics/electronics

|  |  |
|--|--|
| <b>Supply voltage <math>V_s</math></b> | DC 12 V (-5 %) ... DC 24 V (+10 %)                         |
| <b>Power consumption</b>               | $\leq 1.92 \text{ W}^{1)}$                                 |
| <b>Warm-up time</b>                    | $\leq 5 \text{ min}$                                       |
| <b>Housing material</b>                | Stainless steel  |
| <b>Window material</b>                 | PPSU   |
| <b>Connection type</b>                 | Male connector, M8, 4-pin                                  |
| <b>Indication</b>                      | 4-digit 7-segment display (plus 4 LEDs for status display) |
| <b>Operating elements</b>              | 4 buttons  |
| <b>Weight</b>                          | 70 g   |
| <b>Dimensions</b>                      | 44.4 mm x 31 mm x 17 mm                                    |
| <b>Enclosure rating</b>                | IP67   |
| <b>Protection class</b>                | III  |

<sup>1)</sup> Without load, with current output.

## Ambient data

|  |   |
|--|---|
| <b>Ambient temperature operation</b>       | -10 °C ... +50 °C   |
| <b>Ambient storage temperature</b>         | -20 °C ... +60 °C   |
| <b>Min. rel. humidity (not condensing)</b> | 35 %  |
| <b>Max. rel. humidity (not condensing)</b> | 95 %  |
| <b>Temperature drift</b>                   | $\pm 0.08 \text{ % FS/K}$ (FS = Full Scale = Measuring range of sensor)         |
| <b>Typ. Ambient light immunity</b>         | Artificial light: $\leq 3,000 \text{ lx}$<br>Sunlight: $\leq 10,000 \text{ lx}$ |
| <b>Vibration resistance</b>                | 10 Hz ... 55 Hz (amplitude 1.5 mm, x-, y-, z-axis 2 hours each)                 |
| <b>Shock resistance</b>                    | 50 G (x, y, z axis 3 times each)  |

## General notes

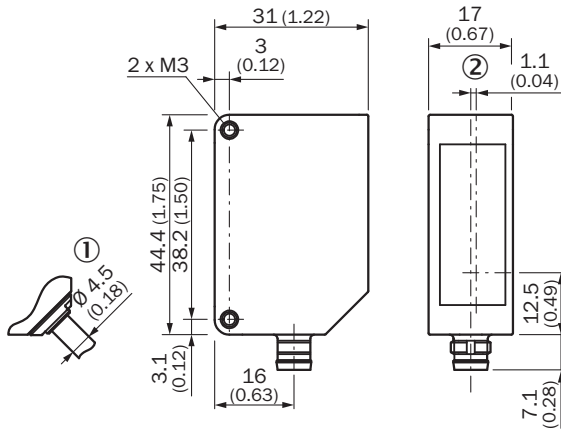
|             |  |
|-------------|--|
| <b>Note</b> | Not free of paint wetting impairment substances. |
|-------------|--|

## Classifications

|                       |          |
|-----------------------|----------|
| <b>ECl@ss 5.0</b>     | 27270801 |
| <b>ECl@ss 5.1.4</b>   | 27270801 |
| <b>ECl@ss 6.0</b>     | 27270801 |
| <b>ECl@ss 6.2</b>     | 27270801 |
| <b>ECl@ss 7.0</b>     | 27270801 |
| <b>ECl@ss 8.0</b>     | 27270801 |
| <b>ECl@ss 8.1</b>     | 27270801 |
| <b>ECl@ss 9.0</b>     | 27270801 |
| <b>ETIM 5.0</b>       | EC001825 |
| <b>ETIM 6.0</b>       | EC001825 |
| <b>UNSPSC 16.0901</b> | 41111613 |

**Dimensional drawing** (Dimensions in mm (inch))

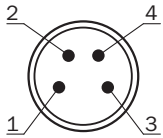
Stainless steel housing



- ① Variant with 30 cm cable with M12, 5-pin connector
- ② Optical axis

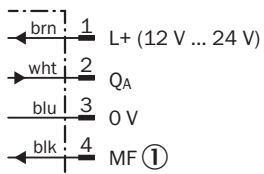
**Connection type**

OD1-BxxxxxI14 OD1-BxxxxxU14 4-pin, M8 male connector



**Connection diagram**

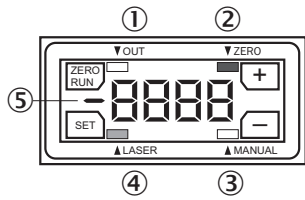
OD1-BxxxxxI14 OD1-BxxxxxU14 4-pin, M8 male connector



- ① Multifunctional input (MF)

## Adjustment possible

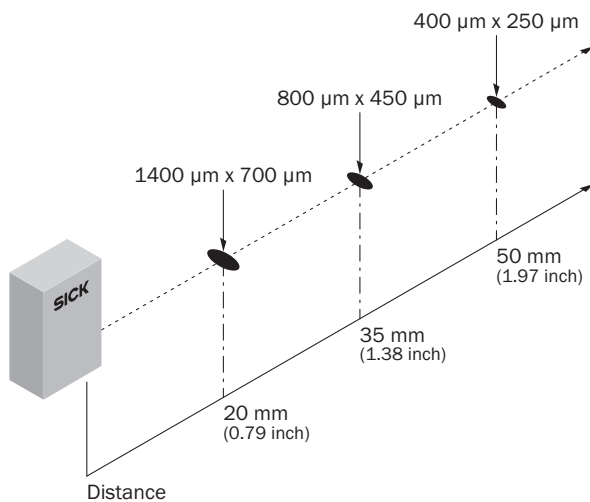
Adjustments



- ① Switching output status indicator
- ② Zero offset status indicator
- ③ Teach mode status indicator
- ④ Laser status indicator
- ⑤ Minus sign for measured value indicator

## Light spot size

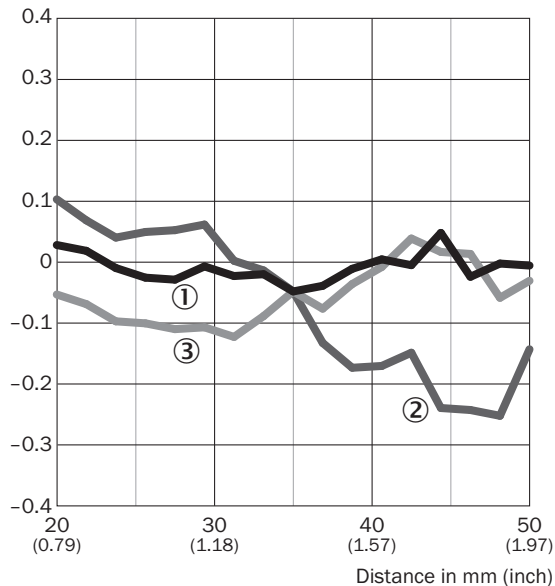
OD Mini Prime 20 mm ... 50 mm



## Linearity

OD Mini Prime 20 mm ... 50 mm






Linearity [% FS]



- ① White ceramic
- ② Stainless steel
- ③ Black rubber

## Recommended accessories

Other models and accessories → [www.sick.com/OD\\_Mini](http://www.sick.com/OD_Mini)

|   | Brief description  | Type               | Part no. |
|---|--|--------------------|----------|
| <b>Mounting brackets and plates</b>   |  |                    |          |
|  | Mounting bracket, no alignment bracket, stainless steel  | BEF-OD1-B          | 5328344  |
| <b>Plug connectors and cables</b>   |  |                    |          |
|  | Head A: female connector, M8, 4-pin, straight, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m                                 | YF8U14-020UA3XLEAX | 2094791  |
|  | Head A: female connector, M8, 4-pin, angled, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m                                   | YG8U14-020UA3XLEAX | 2095589  |
|  | Head A: female connector, M8, 4-pin, straight<br>Head B: male connector, M8, 4-pin, straight<br>Cable: PUR, 2 m  | DSL-0804-G02MB     | 6059742  |
|  | Head A: female connector, M8, 4-pin, straight, A-coded<br>Head B: male connector, M8, 4-pin, straight, A-coded<br>Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m | YF8U14-020UA3M8U14 | 2096347  |

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)